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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

IN RE: JUUL LABS, INC., MARKETING, SALES PRACTICES, AND PRODUCTS LIABILITY LITIGATION	Case No. 19-md-02913-WHO
This Document Relates to: ALL ACTIONS	**BRIEF #3: DEFENDANT JUUL LABS, INC.'S OMNIBUS *DAUBERT* MOTION TO EXCLUDE CERTAIN OPINIONS ON TOXICITY AND ALLEGED HEALTH EFFECTS** Judge: Hon. William H. Orrick Date: February 25, 2022 Ctrm.: 2

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INTRODUCTION

Plaintiffs must establish both general and specific causation with expert testimony—that JUUL use is capable of causing the harm alleged, and that a particular individual in fact suffers from the alleged harm as a result of JUUL use. The scientific methods for experts to follow in opining on causation are so well-established that they have become a bedrock of *Daubert* jurisprudence. Epidemiology is the gatekeeper for general causation, but here, Plaintiffs have no reliable or sufficient epidemiology. Plaintiffs thus turn to chemistry and toxicology to try to meet their burden of proof. But Plaintiffs' experts do not follow the well-established methods for determining health risks based on toxicology and chemistry; most critically, they fail to evaluate the dose threshold of the chemical constituents of JUUL products and what level of exposure a JUUL user would have. As a result, Plaintiffs' experts cannot state the actual risks posed by JUUL products for any disease other than addiction, whether in absolute terms, relative to combustible cigarettes (the appropriate yardstick against which ENDS products are measured), or relative to other ENDS products.

The experts' failures are compounded when they seek to establish specific causation for B.B. They do not follow a differential diagnosis methodology, a well-established process that physicians (including Plaintiffs' own experts in their practices outside litigation) use every day to rule in and then rule out potential causes of disease. Absent that, they fail to use any methodology that would allow them to eliminate other potential causes of B.B.'s alleged injuries, including the fact that she already was diagnosed with certain conditions or had other risk factors. Further, without any reliable scientific evidence, B.B.'s experts opine that she has conditions that she has never been diagnosed with outside of litigation and has no risk of developing, making their claims for monitoring unsupported.

Plaintiffs may contend that the recency of JUUL's development and widespread use made it impossible for them to perform long-term epidemiological studies or otherwise meet the high standard required by *Daubert*. But it was Plaintiffs' choice to bring this litigation when the science regarding JUUL was in a nascent state, and to press for an accelerated schedule rather than waiting for a comprehensive scientific consensus to emerge. Plaintiffs' choice to rush this litigation should not excuse their failure to meet this Court's evidentiary standards.

For these reasons, Defendants respectfully request the Court exclude:

- Expert opinions that JUUL, its chemical constituents, or nicotine in JUUL are toxic;
- Expert opinions on general causation for non-addiction health claims;
- Expert opinions about the impact of nicotine on the developing brain or the psychological impact of addiction;
- Expert opinions on specific causation for B.B.'s non-addiction health claims and request for medical monitoring.

I. *DAUBERT* LAW IS WELL-ESTABLISHED ON CAUSATION.

Plaintiffs bear the burden of proof to show "within a reasonable medical probability based upon competent expert testimony . . . that the substance at issue was capable of causing the injury alleged (general causation), and that the substance caused, or was a substantial factor in causing, the specific plaintiff's injury (specific causation)." *Avila v. Willits Env't Remediation Tr.*, 633 F.3d 828, 836 (9th Cir. 2011) (citations omitted); *In re Hanford Nuclear Rsrv. Litig.*, 292 F.3d 1124, 1133 (9th Cir. 2002); *Zellers v. NexTech Ne., LLC*, 533 F. App'x 192, 196 n.6 (4th Cir. 2013); Federal Judicial Center, *Reference Manual on Scientific Evidence* (3d ed. 2011) [hereinafter "Reference Manual"] at 609 ("The Plaintiff must establish not only that the defendant's agent is capable of causing disease, but also that it did cause the Plaintiff's injury."). As discussed below, despite numerous potential avenues and readily acceptable methods for proving causation, Plaintiffs have failed to meet their burden with regard to either type of causation.

A. General Causation

To establish general causation, "the generally accepted method" begins, but does not end, by "look[ing] for statistically significant associations between . . . exposure and [the injury], which are consistent and replicated across epidemiological studies." *In re Zoloft (Sertraline Hydrochloride) Prods. Liab. Litig.*, 26 F. Supp. 3d 449, 455 (E.D. Pa. 2014); *see also In re Lipitor (Atorvastatin Calcium) Mktg., Sales Pracs. & Prods. Liab. Litig.*, 174 F. Supp. 3d 911, 926 (D.S.C. 2016) ("Epidemiology provides the primary generally accepted methodology for demonstrating a causal relation between a chemical compound and a set of symptoms or disease." (internal quotation marks omitted)).

If a study reports a statistically significant association, the next step is to evaluate whether the result is reliable. *In re Zoloft*, 26 F. Supp. 3d at 454 (explaining that even when a statistically significant result is found, scientists "will not draw firm conclusions from a single study, as apparent associations may reflect flaws in methodology, including multiple comparisons, bias, or confounding"). This analysis considers, among other things, whether the observed association could be due to factors other than exposure to the substance being studied, such as bias, confounding, or some other flaw in the design of the study. *See* Reference Manual at 583–96.

Once a reliable, statistically significant association has been shown, the final step is to evaluate other causal criteria to determine whether the association rises to the level of a causal relationship. *See, e.g.*, *In re Lipitor*, 174 F. Supp. at 925 ("Courts exclude expert testimony that attempts to start at step two, applying the Bradford Hill criteria without adequate evidence of an association."); *Mathews v. Novartis Pharms. Corp.*, 2013 WL 5780415, at *27 (S.D. Ohio Oct. 25, 2013) ("Unless there is a statistically significant association between the drug and the disease, the Bradford-Hill analysis to determine causation is inapplicable."); *Soldo v. Sandoz Pharms. Corp.*, 244 F. Supp. 2d 434, 461 (W.D. Pa. 2003) ("[A]pplication of the Bradford Hill criteria depends first on an association by epidemiology between a disease and an exposure to an agent."); Reference Manual at 598–99 (emphasizing that the Bradford-Hill factors "are employed only *after* a study finds an association to determine whether that association reflects a true causal relationship") (emphasis in original). This analysis can be done through the Bradford Hill criteria, which outline factors of: (i) consistency and strength of relationship, (ii) temporal relationship between exposure and outcome, (iii) dose-response relationship, (iv) replication of findings, (v) biological plausibility, (vi) alternative explanations, (vii) specificity, and (viii) coherence. *Id.* at 295–59. However, like every other step in the causation analysis, application of these factors must be done in a way that is scientifically reliable. An expert must still actually show causation using each of the factors and not merely cloak "results-driven" conclusions in the mantle of a claimed Bradford Hill analysis. *In re Viagra (Sildenafil Citrate) Prods. Liab. Litig.*, 424 F. Supp. 3d 781, 796 (N.D. Cal. 2020). Among other things, the expert must consider the consistency of the evidence of correlation and its strength. *See, e.g.*, *In re Nexium (Esomeprazole) Prod. Liab. Litig.*, 2014 WL 5313871, at *3 (C.D. Cal. Sept.

30, 2014), *aff'd sub nom. In re Nexium Esomeprazole*, 662 F. App'x 528 (9th Cir. 2016) (excluding expert opinion where expert fails to evaluate "the strength of the purported correlation" or "the consistency of the correlation evidence").

Throughout these steps, general causation requires an assessment of dose—the threshold at which the substance is toxic and whether the levels to which the plaintiff was exposed are sufficient to reach that threshold. Accordingly, the expert must evaluate whether exposure to the challenged substance "at the level of exposure alleged by plaintiffs[] is capable of causing a particular injury or condition in the general population." *In re Hanford*, 292 F.3d at 1133. "[T]o carry the burden of proving a plaintiff's injury was caused by exposure to a specified substance, the plaintiff must demonstrate the levels of exposure that are hazardous to human beings generally as well as plaintiff's actual level of exposure." *Zellers*, 533 F. App'x at 196. *See also, e.g.*, *In re Bextra Mktg. Sales Pracs. & Prod. Liab. Litig.*, 524 F. Supp. 2d 1166, 1175 (N.D. Cal. 2007) ("the general causation inquiry is whether exposure to the challenged substance '*at the level of exposure alleged by the plaintiffs* is capable of causing a particular injury or condition in the general population'") (quoting *Hanford*, 292 F.3d at 1133) (emphasis in original).

Courts have repeatedly rejected lesser forms of evidence as scientifically unreliable for purposes of establishing causation. For example, courts have repeatedly held that animal studies alone are insufficient to establish general causation absent a detailed analysis demonstrating that their results can be extrapolated to the human population. *See, e.g.*, *Daubert v. Merrell Dow Pharms., Inc.* (*Daubert II*), 43 F.3d 1311, 1314 (9th Cir. 1995) (affirming the district court's decision to exclude expert testimony on general causation because experts did not extrapolate a causal link between Bendectin and birth defects based on animal studies and an analysis of other drugs with a similar chemical structure, which the court held failed the Supreme Court's "fit" requirement); *Newkirk v. ConAgra Foods, Inc.*, 727 F. Supp. 2d 1006, 1026 (E.D. Wash. 2010), *aff'd*, 438 F. App'x 607 (9th Cir. 2011) (excluding expert testimony because the expert offered "no explanation for how and why the results of those studies can be extrapolated to humans"); *Hall v. Baxter Healthcare Corp.*, 947 F. Supp. 1387, 1407–11 (D. Or. 1996) (excluding testimony that silicone is capable of causing certain symptoms because the experts were making "too great a leap

of faith;" animal studies could not be reliably extrapolated to humans without explanation); *In re Prempro Prods. Liab. Litig.*, 738 F. Supp. 2d 887, 894 (E.D. Ark. 2010) ("Federal courts have consistently cautioned against extrapolation of human effects from animal studies. In addition to the biological differences between species, most animal studies involve significantly higher concentrations of a substance than would ever be present in humans.") (collecting cases).

Anecdotal evidence and case reports are also insufficient. *See, e.g.*, *Hall*, 947 F. Supp. at 1411 ("[C]ase reports and case studies are universally regarded as an insufficient scientific basis for a conclusion regarding causation because case reports lack controls."); *Jones v. United States*, 933 F. Supp. 894, 899 (N.D. Cal. 1996), *aff'd*, 127 F.3d 1154 (9th Cir. 1997) (holding that general causation cannot be established on the basis of "anecdotal case reports, reviews of research done by other people, or studies lacking a control group" because such evidence is "not derived through the scientific method").

Proof of biological plausibility alone is not enough. *See, e.g.*, *Henricksen v. ConocoPhillips Co.*, 605 F. Supp. 2d 1142, 1178 (E.D. Wash. 2009) (excluding expert testimony because "plausible hypotheses are not 'scientific knowledge,' . . . but the building blocks and catalysts of such knowledge" and "[e]vidence that is an insightful hypothesis is not admissible in court if it lacks scientific rigor" because "the 'law lags science; it does not lead it'"); *In re Viagra*, 424 F. Supp. 3d at 791 (biological plausibility "is only a subsidiary consideration in the larger question of general causation").

Likewise, a temporal relationship between exposure to the product and the alleged injury is necessary but not sufficient. *See, e.g.*, *Alsadi v. Intel Corp.*, 2019 WL 4849482, at *6 (D. Ariz. Sept. 30, 2019) (internal citation omitted) (excluding expert causation opinion because "a causation opinion based solely on a temporal relationship is not derived from the scientific method and is therefore insufficient to satisfy the requirements of Rule 702"); *Prall v. Ford Motor Co.*, 2017 WL 361545, at *4 (D. Nev. Jan. 24, 2017) ("[The expert] concludes that the existence of one event after the existence of another is sufficient to prove the first event caused the second. This is a logical fallacy – *post hoc ergo propter hoc.* While the existence of the [throttle] problem is necessary to conclude that it was the cause of the accident, it is not, in itself, sufficient to establish causation.");

Monje v. Spin Master Inc., 2015 WL 11117070, at *2 (D. Ariz. May 6, 2015), *aff'd*, 679 F. App'x 535 (9th Cir. 2017) (excluding expert witness who "acknowledged that a causation analysis based only on temporality would be insufficient" but relied mainly on temporality for causation opinion).

B. Specific Causation

After making a sufficient showing of general causation based on reliable scientific evidence—that is, that the product at issue is capable of causing the injury alleged—Plaintiffs must further prove through reliable scientific evidence that the product caused their particular injuries, *i.e.*, specific causation. *See, e.g.*, *Avila*, 633 F.3d at 836. Plaintiffs must make this showing regardless of which state law applies.

In order to provide a reliable specific causation opinion, an expert must consider and rule out potential alternative causes of the disease or medical condition. To "establish specific causation, experts need[] to show that" an injury was "caused by [the defendant's product], ***rather than some other factor***." *Hardeman v. Monsanto Co.*, 997 F.3d 941, 965 (9th Cir. 2021) (emphasis added); *see also Daubert II*, 43 F.3d at 1319 (excluding testimony when the expert physician offered "no tested or testable theory to explain how, from this limited information, he was able to eliminate all other potential causes of birth defects"); *Nelson v. Matrixx Initiatives, Inc.*, 592 F. App'x 591, 591 (9th Cir. 2015); *Whisnant v. United States*, 274 F. App'x 536, 537 (9th Cir. 2008); *Claar v. Burlington Northern R.R. Co*, 29 F.3d 499, 502 (9th Cir. 1994) (affirming district court's exclusion of experts in part because "neither Dr. Hines nor Dr. Nelson made any effort to rule out other possible causes for the injuries plaintiffs complain of [as a result of alleged workplace chemical exposure], even though they admitted that this step would be standard procedure before arriving at a diagnosis"); *Newkirk v. ConAgra Foods, Inc.*, 438 F. App'x. 607, 609 (9th Cir. 2011) ("Moreover, Dr. Pue's and Dr. Parmet's specific causation opinions failed to consider several known causes of bronchiolitis obliterans. Those opinions were therefore not admissible to show general or specific causation.").

The Ninth Circuit has recognized that differential diagnosis methodology is a "common scientific technique" that allows for "the determination of which of two or more diseases with similar symptoms is the one from which the patient is suffering, by a systematic comparison and

contrasting of the clinical findings." *Clausen v. M/V New Carissa*, 339 F.3d 1049, 1057 (9th Cir. 2003). It involves: (1) "compil[ing] a comprehensive list of hypotheses that might explain the set of salient clinical findings under consideration," and (2) "eliminating hypotheses" based on the evidence "so as to reach a conclusion as to the most likely cause of the findings in that particular case." *Id.* at 1057–58. The expert must "provide reasons for rejecting alternative hypotheses" using the scientific method and avoiding speculation. *Id.* at 1058. Such rigorous analysis—when properly conducted—is admissible under *Daubert* on the issue of specific causation. *Id*. *See also, e.g.*, *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 262 (4th Cir. 1999) (describing differential diagnosis as "a standard scientific technique"); *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 758 (3d Cir. 1994) ("[D]ifferential diagnosis generally is a technique that has widespread acceptance in the medical community . . . ."); *Redfoot v. B.F. Ascher & Co.*, 2007 WL 1593239, at *11 (N.D. Cal. June 1, 2007) (excluding differential diagnosis where plaintiff expert "failed to consider one specific alternative explanation—that the cause of autism is not known today" and because "he did not rule out the unspecified cause of dysgenesis (a brain malformation)").

II. PLAINTIFFS HAVE FAILED TO EMPLOY WELL-ESTABLISHED, RELIABLE METHODS IN THEIR OPINIONS REGARDING NON-ADDICTION HEALTH RISKS.

Plaintiffs' general causation opinions are not based on any reliable scientific methodology. Plaintiffs have no reliable or sufficient epidemiological studies linking exposure to JUUL aerosol to the health risks they claim. Instead, Plaintiffs' experts seek to suggest causation based on *limited* toxicity and chemical analyses. Their efforts are unreliable because, among other things, they do not account for the relevant threshold dose of JUUL's constituent chemicals and fail to establish that any individual chemical is present in JUUL aerosol at a toxic level. JLI did this analysis under the PMTA. Outside of their flawed toxicology opinions, Plaintiffs' experts also attempt to opine that JUUL use is linked to particular diseases or conditions based on reports, animal studies, or other purported evidence that falls far short of meeting *Daubert*'s standards.

A. Plaintiffs' Reliance On Toxicology, In The Absence of Epidemiology, Is Based On Unreliable Methodology.

Epidemiology is the standard for establishing general causation. No reliable or sufficient epidemiological studies exist for JUUL or for most ENDS devices. Accordingly, Plaintiffs' experts have no basis for asserting JUUL products are capable of causing the non-addiction health risks they claim in their general reports. Plaintiffs cannot meet their burden under the law or under the science.

Absent epidemiological studies, Plaintiffs' experts are left to rely on toxicity and chemical analyses. Plaintiffs' experts attempt to look at the risk of individual constituent chemicals in JUUL aerosol, but they never complete that work because they did not assess dose.

1. A Reliable Risk Assessment Requires Consideration of Dose.

In their reports, Tackett and Pue compile a list of chemicals present at various levels in JUUL aerosol, summarize studies that suggest an association between those chemicals and the development of certain diseases without regard to dose, and assert that JUUL aerosol causes disease. That approach, however, is not sufficient to establish general causation.

Plaintiffs' experts must demonstrate that inhalation exposure to a particular chemical *at the dose it is present in JUUL aerosol* causes the specific harm alleged. *See In re Hanford*, 292 F.3d at 1133 (an expert must evaluate whether exposure to the challenged substance "at the level of exposure alleged by the plaintiffs is capable of causing a particular injury or condition in the general population"); *In re Bextra*, 524 F. Supp. 2d at 1174–75. Indeed, Plaintiffs' experts acknowledge as much. For example, Pue concedes that "dose-response curves are important in anything we evaluate in medicine." Ex. 50, Pue Dep. 89:10–11. That is because almost any substance at a high enough exposure level could become toxic—including water. *Id*. at 90:8–16; Ex. 53, Tackett Dep. 80:3-6; *see also* Reference Manual at 636–37 ("There are three central tenets of toxicology. First, 'the dose makes the poison'; this implies that all chemical agents are intrinsically hazardous—whether they cause harm is only a question of dose. Even water, if consumed in large quantities, can be toxic.").

Despite acknowledging the importance of dose, Plaintiffs' experts fail to use any methodology that accounts for it. Tackett, for example, identifies only two chemicals in his report that he claims "exceed[] known toxic thresholds" in JUUL: vanillin and methylglyoxal. Ex. 24,

Tackett Rep. 4. However, Tackett admitted during his deposition: "I didn't do a calculation on the vanillin." Ex. 53, Tackett Dep. 144:17–24. As to methylglyoxal, Tackett admits there is no established recommended exposure limit for that chemical. Ex. 24, Tackett Rep. 25. He attempts to extrapolate a recommended exposure limit for methylglyoxal, but his calculations are fundamentally unsound. Critically, Tackett's calculations are based on data from two plainly unreliable and inapplicable studies. Tackett admitted that one of the studies he relied on, Azimi et al., potentially tested counterfeit JUUL pods and therefore that study's test results would not accurately reflect actual exposures from JUUL products. Ex. 53, Tackett Dep. 212:1–11. Tackett also relied on Hubbs et al., but that study tested chemicals at exceptionally higher levels than those found in JUUL aerosol—which is relevant because, again, dose matters. *Id.* at 193:13–194:14.

Tackett does not even attempt to offer opinions regarding JUUL users' level of exposure to the various other chemicals he discusses. He acknowledged, for example: "There are no health-based standards for diacetyl inhalation for the general public or standards for children." Ex. 24, Tackett Rep. 24. Tackett extrapolates a short-term exposure limit for diacetyl, but he does not compare it with exposure levels present in JUUL aerosol, and he does not assert that typical inhalation of JUUL aerosol would expose a user to diacetyl above the threshold level. *Id*. at 25.

Pue likewise fails to offer opinions regarding levels of exposure to JUUL aerosol, but includes even less support for his opinions than does Tackett. Pue admits there is no established threshold level at which α-dicarbonyls, diacetyl, methylglyoxal, or ENDS exposure cause any of the lung diseases he lists in his report. Ex. 50, Pue Dep. 154:9–155:17, 156:3–159:22, 164:15–25, 168:16–170:13. Pue also admits that he, like Tackett, did not identify any relative risk association or odds ratios in his report that demonstrate how likely the α-dicarbonyls he discusses in his report are to correlate with specific lung diseases. *Id.* at 161:6–163:9.

Moreover, while Pue intended to take Tackett's methylglyoxal calculations (which, as explained above, are unreliable) and simply "add them in," Pue forgot to do so before submitting his final report. Ex. 50, Pue Dep. 145:7–22. Tackett, not Pue, performed and validated the calculations for methylglyoxal exposure because Pue "didn't have the knowledge, skills, whatever training" to do so himself. *Id*. at 149:11–150:7, 150:16–24. Moreover, Pue did not identify any

relative risk association or odds ratios in his report that demonstrate how likely the chemical constituents he identifies are to correlate with specific lung diseases. *Id*. at 161:6–163:9.

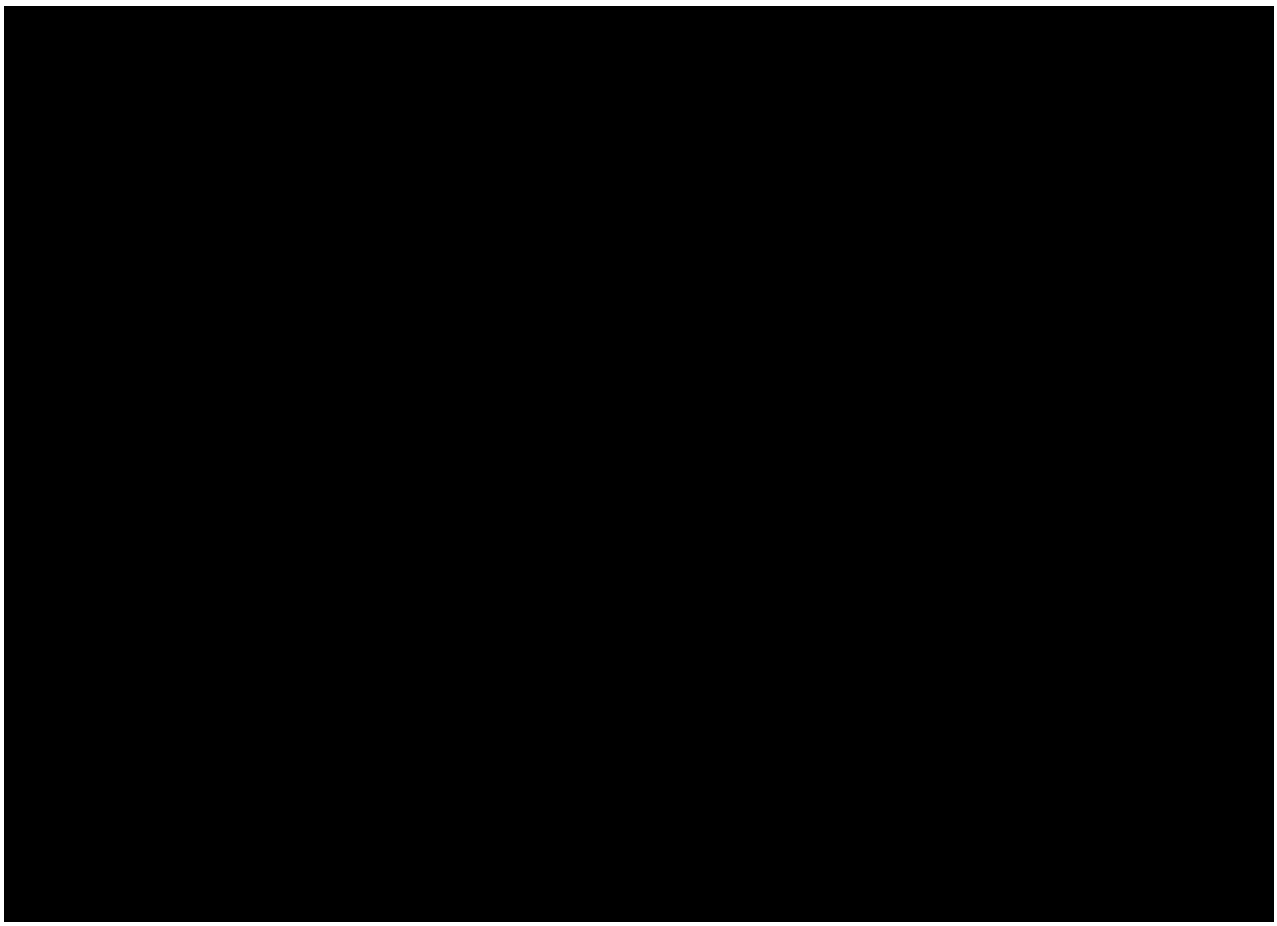
In an attempt to remedy their failure to establish that any individual chemical is present in JUUL aerosol at a toxic level, both Tackett and Pue assert that the combination of chemicals in JUUL aerosol may have an additive effect, which would increase the risk of harm beyond the risks relating to each chemical individually. Neither Pue nor Tackett, however, analyzes whether the specific chemicals in JUUL aerosol actually produce an additive effect. Ex. 53, Tackett Dep. 173:18–174:9. Instead, both conclude that the additive effect may apply simply because it is a generally established tenet of toxicology. *Id*. at 135:6–137:5 (characterizing the additive effect as an "accepted premise," while acknowledging he is not aware of anyone separating out and combining the actual chemicals detected in JUUL aerosol); Ex. 21, Pue Rep. 19. But Tackett testified that two or more chemicals could have an antagonistic, rather than additive, effect, resulting in less toxicity from exposure to a mixture of the chemicals than from exposure to each chemical individually. Ex. 53, Tackett Dep. 174:10–175:21 (noting that this antagonistic effect could even produce entirely nontoxic compounds). Moreover, neither Tackett nor Pue acknowledge the mixture studies that JLI *did* conduct and which did not show such harm. Such cherry picking of available evidence is contrary to Rule 702 and *Daubert. See, e.g.*, *In re Zoloft*, 26 F. Supp. 3d at 460-61 (excluding expert who selectively discussed evidence favoring her opinion to the exclusion of larger body of contrary evidence); *Lust By & Through Lust v. Merrell Dow Pharms., Inc.*, 89 F.3d 594, 596 (9th Cir. 1996) (affirming the exclusion of an expert whose testimony "'pick[ed] and chose' from the scientific landscape").

2. JLI Did What Plaintiffs' Experts Did Not, As Part Of The PMTA.

JLI did the risk assessment that Plaintiffs' experts did not. The FDA requires a Premarket Tobacco Product Authorization ("PMTA") to include reports of the "investigations that have been made to show the health risks" of a product as well as "a full statement of the components [and] ingredients" of the product. 21 U.S.C. § 387j(b)(1)(A)–(B). It also requires a showing that if permitted, the product to be sold "would be appropriate for the protection of the public health." 21 U.S.C. § 387j(c)(2)(A). In the context of e-cigarettes, the FDA has issued guidance indicating the

types of scientific evidence that should be used to meet these requirements. *See* U.S. FOOD & DRUG ADMIN., PREMARKET TOBACCO PRODUCT APPLICATIONS FOR ELECTRONIC NICOTINE DELIVERY SYSTEMS; GUIDANCE FOR INDUSTRY (2019). That guidance recommends clinical and nonclinical studies assessing the chemical makeup of the product as well as nonclinical and human subject studies analyzing the product's human health impact. *Id.* at 23–41. The agency notes that "nonclinical studies alone are generally not sufficient" and instructs that the use of existing public literature be accompanied by "appropriate bridging information (i.e., why the data are applicable to the new tobacco product)." *Id.* at 12–13.

In a PMTA, an applicant is required to disclose "all investigations, published or known to, or which should reasonably be known to, the applicant regarding the toxicological profile of the new tobacco product related to the route of administration, including, but not limited to, the genotoxicity, carcinogenicity, respiratory toxicity, cardiac toxicity, reproductive and developmental toxicity, and chronic (repeat dose) toxicity of the new tobacco product relative to other tobacco products." Final Rule: Premarket Tobacco Product Applications and Recordkeeping Requirements. 86 Fed. Reg. 55,361 (Oct. 5, 2021) (to be codified at 21 C.F.R. pt. 1114). To meet the FDA's requirements, JLI conducted a quantitative risk assessment and a qualitative risk assessment in conjunction with its PMTA. Ex. 91, JLI20000123, at JLI200000139–140, 155, 156, 160-162, 167–168, 233 (describing JLI's quantitative and qualitative risk assessments). [redacted]



JLI's PMTA contains the only comprehensive risk assessment in the record. Plaintiffs' experts recognize the extensive nature of JLI's PMTA's risk assessment, yet none of them endeavored to replicate it. Ex. 53, Tackett Dep. 99:2–100:2; Ex. 30, Casey Dep. 49:21–50:10. Nor, critically, did Plaintiffs' experts conduct their own risk assessment or anything close to what the PMTA states is required to establish human health impacts.

3. Plaintiffs' Experts Have Failed To Present Reliable Scientific Evidence Regarding Nicotine Toxicity

Plaintiffs' experts also offer opinions that the nicotine in JUUL products is harmful at the levels present in JUULpods, but these opinions are not based on reliable evidence. No empirical evidence, whether cited by Plaintiffs' experts or otherwise, demonstrates that nicotine is "toxic" or causes any chronic health conditions. The words of noted tobacco researcher Michael A. H. Russell on this point remain true nearly fifty years later: "People smoke for nicotine but they die from the tar." M. A. H. Russell, *Low-Tar and Medium-Nicotine Cigarettes*, British Medical Journal 1430, 1431 (1976).

The harms claimed by Plaintiffs' experts from the toxicity of nicotine generally fall into three categories: (1) harms from smoking combustible cigarettes that Plaintiffs' experts misattribute to nicotine; (2) speculative harms that are not supported by the academic literature; and (3) the effects of very high doses of nicotine that are both transient and unlikely to be experienced by the average JUUL user. In each of these categories, Plaintiffs' experts misapply or misstate existing evidence to reach their conclusions regarding JUUL.

Misattribution of Harms from Smoking. Many of Plaintiffs' experts describe harms from "nicotine use" that are actually harms from smoking combustible cigarettes. Because they fail to distinguish the chemicals or components causing these effects, these experts' opinions lack a reliable basis. Casey, for instance, admits, "Nicotine is typically studied in the context of cigarettes and all the chemicals that are part of cigarette smoke." Ex. 1, Casey Rep. 10. Although she purports to offer the opinion that vaping inhibits fetal lung development, she admits this is based solely on findings "that cigarette smoke exposure alters lung development in fetuses" and she believes "it is critical to understand whether vaping products will do the same." *Id.* at 23. Her opinion on this, therefore, is pure speculation and has no scientific basis. Other experts make the same mistake. For instance, Eissenberg faults nicotine for "keep[ing] smokers buying cigarettes and smoking them." Ex. 6, Eissenberg Rep. 16. These opinions fail the basic analysis of disaggregating nicotine from the many other components of cigarettes that are not present in JUUL products. Where the scientific evidence cited actually measures combustible cigarette use, it is virtually impossible to separate the effects of pure nicotine exposure from the effects of other cigarette constituents.

Speculative Harms. The vast majority of toxic nicotine effects alleged by Plaintiffs' experts are speculative in nature. Many are alleged without any scientific support, such as Halpern-Felsher's assertion that nicotine is "associated with mood changes, including irritability, depression, restlessness, anxiety, [and] problems socializing." Ex. 10, Halpern-Felsher Rep. 32. Without any evidentiary support, Halpern-Felsher's word alone is not sufficient to suggest that these injuries can be caused by nicotine and specifically by JUUL. Casey claims that "many adolescents using vaping products present with symptoms of nicotine toxicity," which "include stomach pain, dizziness, headaches, and difficulty concentrating," but she cites no scientific evidence describing any such

effects or demonstrating their association with nicotine. Ex. 1, Casey Rep. 13–14. Some experts' alleged harms from nicotine include citations to scientific research, but the studies cited do not conclusively show that nicotine is the cause of the associated harm. *See, e.g.*, Ex. 25, Winickoff Rep. 30–32 (labeling a broad range of ailments "Health Harms of Nicotine Use" based on weak associations in select studies between e-cigarette use and moderate changes in mood and concentration). No expert conducts a Bradford Hill analysis to determine whether any measured associations with nicotine are causal, nor do they cite sufficient scientific evidence to establish that such effects are repeatable and applicable to JUUL. Opinions relying solely on an expert's *ipse dixit* are not reliable.

In other instances, Plaintiffs' experts suggest that nicotine has toxic effects based purely on animal studies, gene research, cellular research, or other experimental research that has not yet been reliably applied to human health. Grunberg and Winickoff both opine that nicotine consumption can weaken the immune system, but both rely on scientific findings on the gene level and the cellular level without any epidemiological support. The studies they cite do not make claims of causality, stating only that certain observed gene effects indicated that nicotine exposure "may broadly suppress" the immune system, but conceding that "more studies on the effects of vaping on immune cells are needed." Jeffrey Gotts et al., *What are the respiratory effects of e-cigarettes?*, British Medical Journal 366 (2019). This research is far too preliminary to support the opinions Winickoff and Grunberg offer regarding immune system reduction from nicotine exposure. Likewise, many of Winickoff's alleged harms related to mood, sleep, gastroesophageal health, and cardiovascular health are based on preliminary findings from animal studies. Animal studies are typically not accepted as reliable evidence without a thorough analysis of their application to humans.

Plaintiffs' experts also claim that nicotine can affect adolescent brain development, but those claims, as discussed in greater depth below, are also largely based on findings from animal studies that are not properly extrapolated to humans. They further claim addiction itself as a harm, but, as shown in the contemporaneously filed brief regarding opinions on addiction, their claims of addiction to JUUL do not meet the relevant standard for demonstrating addiction.

Acute Effects. While there is some evidence that nicotine consumption has transient effects on heart rate or blood pressure, such effects are common with other products that are not generally considered harmful, such as caffeine and cacao. Rabia Latif & Farrukh Majeed, *Association between chocolate consumption frequency and heart rate variability indices*, 16 EXPLORE 372 (2020); Duncan Turnbull et al., *Caffeine and cardiovascular health*, 89 Regul. Toxicology and Pharmacology 165 (2017). Moreover, the few instances in which acute adverse effects of nicotine exposure are reported tend to be associated with ingestion of nicotine at levels generating blood concentrations far in excess of blood nicotine levels derived from typical use of JUUL ENDS. Gerdinique C. Maessen et al., *Nicotine intoxication by e-cigarette liquids: A Study of Case Reports and Pathophysiology*, 58 Clinical Toxicology, 1 (2020); J.P. Vakkalanka et al., *Epidemiological trends in electronic cigarette exposures reported to U.S. Poison Centers*, 52 Clinical Toxicology, 542 (2014). Plaintiffs' experts point to no study showing acute adverse effects from JUUL use occurring with any frequency, and they present no evidence that the transient effects of nicotine on heart rate or blood pressure result in long-term harm to JUUL users.

Chronic Effects. Plaintiffs' experts allege that nicotine exposure can result in chronic injury through cardiovascular disease. Specifically, they opine that JUUL usage is capable of increasing cardiovascular risk, but this opinion lacks a reliable basis. For example, Grunberg opines that "[p]rolonged nicotine exposure can impair the function of endothelial cells, resulting in the dysfunction of one's cardiovascular system, which can lead to conditions such as atherosclerosis and thrombosis." Ex. 8, Grunberg Rep. 16. Grunberg, however, does not discuss the dose at which such effects may occur or point to any studies showing such effects from JUUL products in actual human beings.

Similarly, Winickoff offers a list of possible cardiovascular harms that he alleges may be caused by e-cigarettes or nicotine, but he fails to support any causation opinion regarding cardiovascular harm from JUUL use with any reliable scientific evidence. Of the three studies he cites for the claim that e-cigarettes "increase blood pressure and heart rate directly," for instance, two found that e-cigarettes have *fewer* negative cardiovascular effects than cigarettes and the third concluded that "no statistically significant association between e-cigarette use and CVD

[cardiovascular disease] was found." Ex. 25, Winickoff Rep. 36; *see* Konstantinos E. Farsalinos et al., *Is e-cigarette use associated with coronary heart disease and myocardial infarction? Insights from the 2016 and 2017 National Health Interview Surveys*, 10 Therapeutic Advances in Chronic Disease 8 (2019). Accordingly, while there is some evidence that nicotine consumption has transient effects on heart rate or blood pressure, such effects are common with other products that are not generally considered harmful, such as caffeine and cacao. Latif, *supra* at 372-375; Turnbull, *supra* at 165. Plaintiffs' experts point to no study demonstrating that these effects on heart rate or blood pressure result in actual cardiovascular disease in JUUL users.

Scientific Consensus on Nicotine Toxicity. Although nicotine use has been studied for more than half a century, no significant toxic effect on human health have been conclusively traced to nicotine. The seminal Surgeon General's report on smoking in 1964 stated, "There is no acceptable evidence that prolonged exposure to nicotine creates[] dangerous functional change" and "[t]he minor evidence of toxicity, nausea, digestive disturbances and the like, are similar in kind and degree across all forms of use." U.S. PUB. HEALTH SERV., "SMOKING AND HEALTH" (1964) at 74. The report also found that "the chronic toxicity of nicotine in quantities absorbed from smoking and other methods of tobacco use is very low and probably does not represent a significant health problem." *Id.* at 75.

Scientists' view of nicotine has changed very little in the intervening decades. As stated in a 2013 study, "It is now understood that nicotine itself is not very harmful, and nicotine replacement therapy products have been widely used" for tobacco harm reduction. Karl Olov Fagerstrom & Kevin Bridgman, *Tobacco Harm Reduction*, 39 Addictive Behaviors 507 (2013); *see also* Mitch Zeller & Scott Gottlieb, *A Nicotine-Focused Framework for Public Health*, 377 New England J. Medicine 1111 (2017) ("Nicotine, though not benign, is not directly responsible for the tobacco-caused cancer, lung disease, and heart disease that kill hundreds of thousands of Americans each year."). Plaintiffs' experts' claims on nicotine toxicity lack evidentiary support and are out of step with the well-established scientific consensus on nicotine.

4. Plaintiffs' Experts Do Not Attempt to Determine the Impact of the JUUL Product on Baseline Consumer Risk: Smokers, Former Smokers, and Nicotine Naïve Users.

Plaintiffs' experts also do not make comparisons that are informative toward this case. The relevant standard for assessing ENDS products under the Tobacco Control Act requires Plaintiffs' experts to compare them to combustible cigarettes to assess their appropriateness for the protection of public health. Under this standard, the FDA considers "the risks and benefits of the marketing of the new tobacco product to the population as a whole, including users and nonusers of tobacco products" and does so by "compar[ing] the health risks of [an ENDS] product to both products within the same category and subcategory, as well as products in different categories as appropriate." Premarket Tobacco Product Applications for Electronic Nicotine Delivery Systems: Guidance for Industry. June, 2019. Silver Spring, MD: U.S. Dept. of Health and Human Services—Food and Drug Administration (FDA)—Center for Tobacco Products. This comparison sets tobacco products apart from other products that the FDA evaluates like prescription drugs; the FDA has explained that its "traditional 'safe and effective' standard for evaluating medical products does not apply to tobacco products." *Rules and Regulations: A New Standard of Effective Regulation* Silver Spring, MD: Food and Drug Administration (FDA), *available at* https://www.fda.gov/tobacco-products/rulesregulations-and-guidance/rules-and-regulations.

Plaintiffs' experts recognize that the FDA's standard governing ENDS devices is whether the product is "appropriate for the protection of public health"—not the "safe and effective" standard that applies to prescription drugs. Ex. 53, Tackett Dep. 113:18–115:1, 105:20–108:3; Ex. 30, 11/08/2021 Casey Dep. 49:12–20, 60:4–11; Ex. 54, 11/05/2021 Winickoff Dep. 192:5–13, 193:8–20; Ex. 42, 11/09/2021 Levy Dep. 102:2–17, 115:11–116:7, 290:23–291:2. Yet, no Plaintiffs' expert conducted an analysis of whether JUUL products are appropriate for the protection of public health. Plaintiffs' experts instead assert that using JUUL products, regardless of any comparison to combustible cigarettes, can cause or contribute to harmful health effects. However, as the FDA recognizes through its appropriate for the protection of public health standard, any alleged health effects from using JUUL products must be understood in relation to the health risks from using other tobacco products like combustible cigarettes.

Plaintiffs' experts wholly disregard the comparison between the likelihood of harm caused by combustible cigarettes and the likelihood of harm caused by exposure to JUUL aerosol. Indeed, Tackett stated flat out: "The comparisons of Juul to combustible cigarettes is irrelevant for purposes of my analysis." Ex. 24, Tackett Rep. 6. Tackett also testified that if Plaintiffs asked him to opine on the dangers of JUUL for a former combustible cigarette smoker, he "would have to decide on whether [he] would be involved in that case"—he would not necessarily agree to submit a report if the claims involved a combustible cigarette smoker. Ex. 53, Tackett Dep. 112:10–17. Similarly, Pue testified it "was not my charge in this case . . . to compare e-cigarettes and combustible cigarettes, so I did not draw an opinion based on the information that I was reviewing in that area." Ex. 50, Pue Dep. 106:19–22.

None of Plaintiffs' experts examine or draw any conclusion in relation to the proper standard for assessing JUUL products following the 2016 Deeming Rule's positioning of e-cigarette products under the auspices of the Tobacco Control Act. The question is not whether using JUUL may pose health risks in a vacuum; it is whether using JUUL products decreases risk compared with smoking combustible cigarettes. Plaintiffs' experts fail to address that crucial comparison.

B. Plaintiffs' Experts Have Failed To Present Reliable Scientific Evidence Establishing General Causation For Various Non-Addiction Diseases.

Plaintiffs' experts attempt to make a scientifically unsupported leap and link JUUL use to various potential diseases, but they have no reliable methodology to reach the conclusions they do.

Seizure. There is no reliable or sufficient epidemiological evidence linking JUUL use to seizures, and thus no evidence of general causation. Notably, since 2019, the FDA has been conducting a "scientific investigation to determine if there's a direct relationship between the use of e-cigarettes and a risk of seizure or other neurological symptoms." U.S. Dept. of Health and Human Services—Food and Drug Administration, "FDA encourages continued submission of reports related to seizures following e-cigarette use as part of agency's ongoing scientific investigation of potential safety issue" (2019), *available at* https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html. As of August 2019, FDA reported that it did not "have enough information to determine if e-cigarettes are causing" reported incidents of seizure. *Id.*

Just this month, scientists from FDA's Center for Tobacco Products submitted a letter to the editor of Annals of Emergency Medicine following up on this investigation and the 250 case reports that were submitted between April 2019 and March 2021. The FDA scientists confirmed: "***A causal relationship between e-cigarette use and seizure has not been established***." Weidner, A., et al., "E-Cigarette-Associated Seizure Reports to Food and Drug Administration Lack Medical Information." *Annals of Emergency Medicine*, Vol. 78, No. 7, p. 802 (emphasis added).

Absent epidemiological evidence, Plaintiffs' experts rely on case reports. Winickoff opines that "[r]ecent case reports have confirmed an elevated risk of seizures with e-cigarette use." Ex. 25, Winickoff Rep. 13. But case reports cannot show causation. *See, e.g.*, *Hall*, 947 F. Supp. at 1407-11; *Jones*, 933 F. Supp. at 899. Pue agrees: "A single case report is probably – would be the weakest in the strength of association . . . ." Ex. 50, Pue Dep. 135:5–13. He further testified that case reports cannot establish causation: "It's probably likely that case reports alone, with no other data, would not be enough to draw a general causation. No." *Id.* at 89:3–5. The fact that some individuals who have used ENDS products have had seizures (like individuals who have not used ENDS products), is not a reliable basis for establishing an association, much less causation. *Id.* at 67:3–7 ("There is a difference in epidemiology between association and causation. Association just means that two factors are related, but one factor may not be causing the other factor to be present.").

Asthma. There is no reliable or sufficient epidemiological evidence linking JUUL use to asthma or asthma exacerbation, and thus no evidence of general causation. Casey admits there is no study that finds a causal link between e-cigarette use and worsening asthma. Ex. 30, 11/08/2021 Casey Dep. 113:10-17, 152:13-17, 155:2-7, 159:7-12. Likewise, Pue testified that he does not know of a threshold level of exposure to ENDS products sufficient to cause asthma. Ex. 50, Pue Dep. 168:16-23.

EVALI. There is no epidemiological evidence linking JUUL use to e-cigarette or vaping associated lung injury ("EVALI"), and thus no evidence of general causation. Plaintiffs' experts have no reliable basis to assert that JUUL has any role in causing EVALI. To the contrary, the CDC specifically investigated the cases in which this condition arose and determined that the main cause of the outbreak is most likely vitamin E acetate, an ingredient in some THC-containing e-cigarette

products, which can "interfere with normal lung functioning" when inhaled. CDC, Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products, (2020), *available at* https://www.cdc.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html. JUUL pods do not contain THC, and vitamin E acetate is not an intended ingredient. Further, as part of its PMTA testing, "JLI [had] not identif[ied] any cases of EVALI attributed to the use of a JUUL product." Ex. 93, JLI20002792. Thus, Plaintiffs' experts have no reliable scientific basis upon which to conclude that JUUL has any role in EVALI, and any such opinions should be excluded.

Other Respiratory Conditions. Tackett and Pue make sweeping assertions that JUUL products may be associated with other respiratory conditions such as bronchitis, emphysema, and COPD, without any scientific support. There is no reliable or sufficient epidemiological evidence linking JUUL use to these respiratory conditions. To the extent the experts reference studies at all they are either cross-sectional and cannot prove causation (as the studies state); are not on JUUL products; or have other limitations on potential causal connections as set forth by the authors of the studies themselves. Ex. 50, Pue Dep. 201:16–21, 204:14–24, 210:1–14, 216:6–8. Nor do these experts identify any dose of any constituents in JUUL that is associated with any of these other respiratory conditions, much less point to any scientific study that would support such an assertion. Ex. 53, Tackett Dep. 128:3–8 (admitting he does not discuss dose in his opinion stating that JUUL aerosol contains chemicals known to cause respiratory disease); Ex. 21, Pue Rep. 10 (noting Pue set out to determine "whether a chemical, a class of chemicals, or a compound can cause a particular disease," without regard to dose).

Exacerbation of GERD. There is no epidemiological evidence linking JUUL use to gastroesophageal reflux disease ("GERD"), and thus no evidence of general causation. Winickoff opines that JUUL usage is capable of causing or exacerbating GERD. However, Winickoff relies on only one animal study for this proposition. Ex. 25, Winickoff Rep. 40 (citing S. Rattan & R. Goyal, *Effect of Nicotine on the Lower Esophageal Sphincter*, 69 Gastroenterology 154 (1975)). That study involved intravenous injections of nicotine into opossums under conditions designed to "produce maximal relaxation of the LES (lower esophageal sphincter)." Rattan & Goyal, *supra*, at 154. Although the study found a "dose-dependent reduction in LES pressure," it acknowledged

both that LES contractions could also occur. *Id.* at 155–159. More importantly, changes in LES pressure do not necessarily result in acid reflux. Accordingly, contrary to Winickoff's assertion, the study did not even purport to link the level of relaxation experienced in the anesthetized opossums to acid reflux, much less acid reflux in humans; the closest it came was a passing reference that other studies suggest that reduced LES pressure "*may predispose*" people to GERD. *Id.* at 154. "It is axiomatic that causation testimony is inadmissible if an expert relies upon studies or publications, the authors of which were themselves unwilling to conclude that causation has been proven." *Huss v. Gayden*, 571 F.3d 442, 459 (5th Cir. 2009) (citing *Gen. Elec. Co. v. Joiner*, 522 U.S. 136, 145–46 (1997)). More generally, Winickoff offers no basis to conclude that this study in animals can be extrapolated to humans.

C. Plaintiffs Have Failed to Present Reliable Scientific Evidence Regarding the Impact of Addiction on the Developing Brain.

Plaintiffs' experts do not offer any reliable methodology to support their opinion that adolescent JUUL use can impair brain development. In support of his opinion, Winickoff cites the Surgeon General's 2016 report on e-cigarette use among youth and young adults, which in turn states only that "[r]odent studies have implications for human adolescents" and that it is ***possible*** that tobacco use during youth affects brain development. Surgeon General's Report 2016 at 107. However, Winickoff provides no analysis, much less any reliable analysis, demonstrating that the results of these animal studies may be extrapolated to humans. In particular, he does not show that the dose of nicotine the rodents received in these studies was comparable to the dose that humans would receive from JUUL products or any neurodevelopmental results that have been validated in humans. Winickoff's failure to account for dose-response effects and to present any reliable basis for extrapolating these animals to humans renders his opinions unreliable and inadmissible.

The studies Levy cites are similarly flawed, examining combustible cigarettes containing a vast array of constituents that are not present in the aerosol from JUUL or other ENDS devices. Moreover, even these studies on combustible cigarettes are not controlled, randomized trials and do not show a consistent dose-response effect.

D. Plaintiffs Have Failed to Present Reliable Scientific Evidence Regarding the Psychological Impact of Addiction.

Prochaska, Levy, Grunberg, and Winickoff offer several opinions on the purported psychological and behavioral impacts of nicotine addiction, including but not limited to anxiety disorders, mood disorders, and disruptive behavior disorders. As conceded by Levy, however, these purported psychological and behavioral disorders themselves are known risk factors that increase the likelihood of substance abuse—including abuse of nicotine. *See* Ex. 42, 11/9/2021 Levy Dep. 37:6–40:7. In other words, the mental health conditions Plaintiffs' experts discuss may be a ***cause*** of JUUL usage, rather than an effect. Plaintiffs' experts offer no study or data to demonstrate that JUUL is in fact a cause of any such conditions. Nor do Plaintiffs' experts employ any reliable methodology to disentangle the psychological and behavioral disorders that increase the risk that an adolescent uses nicotine, from their opinions that nicotine addiction causes these disorders. Without any reliable method, the experts' opinions regarding the psychological impacts of addiction should be excluded. *See Henricksen*, 605 F. Supp. 2d at 1175 ("[A]n association does not equal causation, and it is the duty of scientists to rigorously analyze the data to determine whether or not an association is causal.").

Levy's suggestion that the presentation of addiction in ENDS users is somehow different (or worse) than in smokers of combustible cigarettes is similarly unsupported by any reliable scientific evidence. Ex. 13, Levy Rep. 8; *see also id*. at 39 ("Many of these youth report compulsive use that results in vaping every 30-60 minutes during the waking hours of the day, far more than would most cigarette smokers."). While Levy attempts to base this assertion on her experience treating patients, she acknowledged that her experience with smokers of combustible cigarettes consisted of "only ***one single patient*** who presented to the clinic [for] help with combustible cigarettes." *Id*. at 38 (emphasis added) (also noting that "it[] was unusual for teens to seek treatment for tobacco use disorders as a primary presenting complaint in an addiction medicine program"). One single patient primarily seeking treatment for combustible cigarettes is not a sufficient data point from which Levy can draw conclusions and make comparisons to JUUL users.

III. OPINIONS REGARDING B.B. SHOULD BE EXCLUDED.

The experts' specific causation opinions related to the B.B. case similarly lack the reliability required under *Daubert*. The gravamen of the B.B. complaint is that B.B. became addicted to nicotine as a result of her use of JUUL products. Compl. ¶¶ 748–49. Nonetheless, Plaintiff has offered several experts who opine that JUUL [redacted] Plaintiff's experts acknowledge that they have undertaken no reliable analysis to distinguish whether JUUL usage in fact exacerbated these conditions, or whether the conditions were due to the pre-existing or other factors, as required by Ninth Circuit precedent. Indeed, these experts even suggest that [redacted] In sum, Plaintiff's experts' sundry opinions suggesting that JUUL "caused," or "worsened," or may allegedly cause at some unspecified time in the future, alleged medical conditions other than addiction should be excluded in their entirety.

A. The Experts' Specific Causation Opinions Are Unreliable.

As the Ninth Circuit has made clear, to "establish specific causation, experts need[] to show that" an injury was "caused by [the defendant's product], ***rather than some other factor***." *Hardeman*, 997 F.3d at 965 (emphasis added). However, none of the experts offering specific causation opinions ruled out potential alternative causes of B.B.'s alleged injuries.

In fact, they were not instructed to do a differential diagnosis, even though they admit that in their normal practice, they employ differential diagnosis with their own patients. [redacted]

[redacted]

[redacted] The experts' failure to apply the standard methodology they apply outside the courtroom is fatal to their opinions because courts must ensure that an expert "employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 152 (1999).

[redacted]

[redacted]

[redacted]. This anecdotal evidence is insufficient to support a reliable methodology.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted] Levy's anecdotal evidence as to what "typically" happens with other, unknown "kids" is an unreliable basis for establishing causation.

B. There Is No Reliable Support For Medical Monitoring Opinions.

B.B.'s experts also opine that she needs medical monitoring for certain conditions, but lack a reliable basis to do so. Plaintiff must prove that examinations covered under medical monitoring are "different from what would be prescribed in the absence of the exposure." *In re Tobacco Litig.*, 600 S.E.2d 188, 190 (W. Va. 2004); *see also, e.g.*, *Sadler v. PacifiCare of Nev.*, 340 P.3d 1264 (Nev. 2014); *Redland Soccer Club, Inc. v. Dep't of the Army*, 696 A.2d 137, 145–46 (Pa. 1997). Plaintiff's experts have not provided any reliable basis to conclude that additional "monitoring" beyond what B.B. ordinarily receives is necessary. [redacted]. Plaintiff's experts have provided no reliable basis for concluding that any additional "monitoring" is needed beyond the care that B.B. is already receiving.

Likewise, Plaintiff must establish that the proposed medical monitoring is a reasonably necessary consequence of exposure. *See, e.g.*, *Donovan v. Philip Morris USA, Inc.*, 914 N.E.2d 891,

902 (Mass. 2009); *Potter v. Firestone Tire & Rubber Co.*, 863 P.2d 795, 800 (Cal. 1993). [redacted]

CONCLUSION

For the foregoing reasons, JLI respectfully requests that the Court exclude (i) expert opinions that JUUL, its chemical constituents, or nicotine in JUUL are toxic; (ii) expert opinions on general causation for non-addiction health claims; (iii) expert opinions about the impact of nicotine on the developing brain or the psychological impact of addiction; and (iv) expert opinions on specific causation for B.B.'s non-addiction health claims and request for medical monitoring.

DATED: December 24, 2021

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on December 24, 2021, I electronically filed the foregoing document with the Clerk of the Court using the CM/ECF system, which will automatically send notification of the filing to all counsel of record. I also caused a copy of the under-seal documents to be served via electronic mail on all parties.

By: */s/ Renee D. Smith*

Renee D. Smith